Province, China, and gives the following measurements: length 2.4 mm.; diameter 1.2 mm.; length of aperture 1.0 mm.

This species resembles *Hypsobia humida* Heude, but it is much smaller and the body whorl comparatively is also smaller.

LYMNAEA AURICULARIA LINNAEUS IN WESTERN WASHINGTON AND KAMCHATKA

BY W. J. EYERDAM

Recently Professor Trevor Kincaid told me that he had found a decidedly unfamiliar species of *Lymnaea* in a small lake north of Seattle. From his description it was easy to guess that the species must be *Lymnaea auricularia* Linne. When I received three specimens I was able to verify my guess definitely.

In my own collection I have specimens that I took from a small artificial pond north of Seattle in 1933 and another small lot from Green Lake, north Seattle, in 1934. At that time the shore of the lake was littered with windrows of dead shells of *Lymnaea palustris* Müll., *Physa virginea gabbii* Tryon, *Planorbis trivolvis hornii* Tryon, and *Anodonta kennerlyi* Lea. Only two broken shells of *Lymnaea auricularia* L. were found amongst the thousands of *Lymnaea palustris*.

Only a casual mention of this species is made in Hendersons' "The non-marine mollusca of Oregon and Washington" 1929. This is on page 132. Henderson merely states. "The range and synonymy given by Hannibal are wholly untenable."

The specimens taken from Green Lake and the small lake north of Seattle by Kincaid compare rather closely with specimens that I collected in a pond on the shore of the river Tom near Tomsk, Siberia, in 1928. Specimens that I collected in a small artificial pond north of Seattle compare quite closely with topotypes of *Lymnaea stagnalis occidentalis* Hemphill collected by Junius Henderson in 1928 in Lake Whatcom near Bellingham, except that the spire is somewhat shorter and the color is a darker greenish horn color, also that the Lake Whatcom shells are more or less malleated. The character of malleation is not very consistent with our Puget Sound region fresh water shells as it occurs frequently amongst individual overgrown *Lymnaea* and *Physa* in some of our numerous quaternary lakes, especially those with

deep muddy bottom and shores. A few shells from the small artificial pond north of Green Lake also compare closely with specimens that I collected in Yorkshire, England in 1928 and at Stockholm, Sweden, in 1930. Several of the ¾-grown specimens are similar to two specimens that I collected in a pond near the mouth of the Kamchatka river at Ustj, Kamtchatsk, in 1925. The Kamchatka specimens are also dead ringers for some of the topotypic specimens from Lake Whatcom and also differ but slightly from specimens of *Lymnaea pereger* Müll. which I have from Surrey, England. The most typical altho rather undersized specimens of *Lymnaea auricularia* that I have are from the Bystrytza river in Poland. My specimens from near the mouth of the Kamchatka river have been submitted to three American specialists of mollusks and they each gave them a different name, thus proving that none of them had had much to do with East Siberian shells. Vanatta called them *Lymnaea vahlii* Möller which is a Greenland species, Bartsch called them *Lymnaea ovata* Linne, which comes pretty close to being correct, while Bryant Walker following Westerlund who was one of the best authorities on northern Asian freshwater shells, called them *Lymnaea ovata* Drap. var. *aberrans* West. which is probably correct when judged by hair-splitting differences.

Without comparisons of anatomical material and judging only from shell characters it seems that there must be imperceptible gradations of characters that link *Lymnaea stagnalis, Lymnaea ovata, Lymnaea pereger,* and *Lymnaea auricularia* with each other. Vast areas in northern Asia have never been explored for shells and northern Canada and Alaska are still practically untouched, although Dr. Alan Mozley has done a great deal in those regions in collecting freshwater shells.

I conclude that the introductions by accident of *Lymnaea auricularia* with aquarium specimens to western Washington have come from various countries in Europe, especially from England and Germany. *Lymnaea auricularia* intergrades closely into several races of *Lymnaea stagnalis* and besides being common to northern and central Europe is scattered sparingly throughout the river systems of northern Asia and the quaternary regions of North America.